2. (Amended) A method for controlling or altering growth characteristics in a plant, comprising the steps of:

(i) introducing into a plant cell a nucleic molecule encoding a cyclin-dependent kinase inhibitor (CKI) which interacts with CDC2a, under the control of a regulatory sequence which controls expression of the cyclin-dependent kinase inhibitor;

(ii) expressing said nucleic acid molecule; and

(iii) regenerating a plant therefrom, which plant has altered growth characteristics.

5. (Amended) A method for increasing the level of cyclin-dependent kinase inhibitor (CKI) which interacts with CDC2a, in a plant cell relative to corresponding cells of a wild type plant, said method comprising the steps of:

(i) introducing into a plant cell a nucleic acid molecule encoding a cyclin-dependent kinase inhibitor under the control of a promoter which functions in plants; and

(ii) expressing said nucleic acid molecule in said plant cell, thereby increasing the level of cyclin-dependent kinase inhibitor in said plant cell.

7. (Amended) A method for modifying plant cell size, said method comprising the steps of:

(i) introducing into a plant cell a nucleic acid molecule encoding a cyclin-dependent kinase inhibitor (CKI) which interacts with CDC2a, under the control of promoter which functions in plants; and

(ii) expressing said nucleic acid molecule in said plant cell, thereby modifying plant cell size.

11. (Amended) A method for modifying cell number in a plant, comprising the steps of:

(i) introducing into a plant cell a nucleic acid molecule encoding a cyclin-dependent kinase inhibitor (CKI) which interacts with CDC2a, under the control of a promoter which functions in plants;

(ii) expressing said nucleic acid molecule in said plant cell; and

(iii) regenerating a plant from said plant cell, wherein said plant has modified cell number.

12. (Amended) The method according to claim 7, 8, 9 or 10 wherein plant cell size is increased.

14. (Amended) A method of altering leaf shape in a plant, comprising the steps of:

(i) introducing into a plant cell a nucleic acid molecule encoding a cyclin-dependent kinase inhibitor (CKI) which interacts with CDC2a, under the control of a promoter which functions in plants;

(ii) expressing said nucleic acid molecule in said plant cell; and

(iii) regenerating a plant from said plant cell, said plant having altered leaf shape.

15. (Amended) A method of altering leaf size in a plant, comprising the steps of:

(i) introducing into a plant cell a nucleic acid molecule encoding a cyclin-dependent kinase inhibitor which interacts with CDC2a, under the control of a promoter which functions in plants;

(ii) expressing said nucleic acid molecule in said plant cell; and

(iii) regenerating a plant from said plant cell, wherein said plant has altered leaf size.

17. (Amended) A method of increasing stomata size of a plant, comprising the steps of:

(i) introducing into a plant cell a nucleic acid molecule encoding a cyclin-dependent kinase inhibitor (CKI) which interacts with CDC2a, under the control of a promoter which functions in plants; and

(ii) expressing said nucleic acid molecule in said plant cell; and

(iii) regenerating a plant from said plant cell, said plant having increased stomata size relative to corresponding wild type plants.

18. (Amended) A method of increasing gas exchange and photosynthesis in a plant, comprising the steps of:

(i) introducing into a plant cell a nucleic acid molecule encoding a cyclin-dependent kinase inhibitor (CKI) which interacts with CDC2a, under the control of a promoter which functions in plants;

(ii) expressing said nucleic acid molecule in said plant cell; and

(iii) regenerating a plant from said plant cell, said plant having increased gas exchange and photosynthesis relative to corresponding wild type plants.

19. (Amended) A method of altering tissue or organ shape in a plant, comprising the steps of:

(i) introducing into a plant cell a nucleic acid molecule encoding a cyclin-dependent kinase inhibitor (CKI) which interacts with CDC2a, under the control of a promoter which functions in plants;

(ii) expressing said nucleic acid molecule in said plant cell; and

(iii) regenerating a plant from said plant cell, wherein said plant has flowers with altered petal shape.

21. (Amended) A method of altering tissue or organ size in a plant, comprising the steps of:

(i) introducing into a plant cell a nucleic acid molecule encoding a cyclin-dependent kinase inhibitor (CKI) which interacts with CDC2a, under the control of a promoter which functions in plants;

(ii) expressing said nucleic acid molecule in the plant cell; and

(iii) regenerating a plant from said plant cell, wherein said plant has flowers with altered petal size.

25. (Amended) A method of altering venation pattern in a plant leaf, comprising the steps of:

(i) introducing into a plant cell a nucleic acid molecule encoding a cyclin-dependent kinase inhibitor (CKI) which interacts with CDC2a, under the control of a promoter which functions in plants;

(ii) expressing said nucleic acid molecule in the plant cell; and

(iii) regenerating a plant from said plant cell, wherein said plant has leaves with an altered venation pattern.

27. (Amended) A method of promoting the transition from the mitotic cycle to G1 arrest in a plant cell, comprising the steps of:

(i) introducing into a plant cell a nucleic acid molecule encoding a cyclin-dependent kinase inhibitor (CKI) which interacts with CDC2a, under the control of a promoter which functions in plants; and

(ii) expressing said nucleic acid molecule in the plant cell.

28. (Amended) The method of claim 27 wherein said facilitating the transition from the mitotic cycle to G1 arrest in a plant cell results in a decrease in endoreduplication in the plant cell.

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29. (Amended) The method of claim 27 wherein said facilitating the transition from the mitotic cycle to G1 arrest in a plant cell results in a decrease in ploidy level in the plant cell.

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30. (Amended) A method of altering plant seed size, comprising the steps of:

(i) introducing into a plant cell a nucleic acid molecule encoding a cyclin-dependent kinase inhibitor (CKI) which interacts with CDC2a, under the control of a promoter which functions in plants;

(ii) expressing said nucleic acid molecule in the plant cell; and

(iii) regenerating a plant from said plant cell, wherein said plant has decreased seed size relative to corresponding wild type plants.

31. (Amended) A method of altering plant seed shape, comprising the steps of:

(i) introducing into a plant cell a nucleic acid molecule encoding a cyclin-dependent kinase inhibitor (CKI) which interacts with CDC2a, under the control of a promoter which functions in plants;

(ii) expressing said nucleic acid molecule in the plant cell; and

(iii) regenerating a plant from said plant cell, said plant having decreased seed shape relative to corresponding wild type plants.

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36. (Amended) A transgenic plant, a variety derived thereof with essentially the same characteristics, a plant part, or plant cell which comprises a nucleotide sequence encoding a cyclin-dependent kinase inhibitor (CKI) which interacts with CDC2a, under the control of a promoter which functions in plants wherein said nucleotide sequence encoding a cyclin-

dependent kinase inhibitor is heterologous to the genome of the transgenic plant, or is homologous but additional to the genome of the transgenic plant or has been introduced into the transgenic plant, plant part or plant cell by recombinant DNA means.

46. (Amended) The transgenic plant of claim 37, wherein the cells have a decreased ploidy level relative to corresponding wild type plants.

48. (Amended) The transgenic plant of claim 36, wherein the total cell number of the plant is decreased relative to corresponding wild type plants.

49. (Amended) The transgenic plant of claim 36, comprising cells of increased size relative to corresponding wild type plants.

50. (Amended) The transgenic plant of claim 36, comprising leaves with increased stomata size relative to corresponding wild type plants.

51. (Amended) The transgenic plant of claim 36 having increased photosynthetic capacity relative to corresponding wild type plants.

52. (Amended) The method of claims 2, 5, 7, 11, 14, 15, 17-19, 21, 25, 27, 30 or 31, wherein the CKI comprises the amino acid sequence as set forth in SEQ ID NO: 2.

53. (Amended) The method of claims 2, 5, 7-11, 13-25, 27, 30, and 31, wherein the nucleic acid molecule comprises the nucleotide sequence as set forth in SEQ ID NO:1.

54. (Amended) The method of claims 2, 5, 7-11, 13-25, 27, 30 and 31 wherein the CKI comprises the consensus amino acid sequence as set forth in any one of SEQ ID NO:34, SEQ ID NO:35, SEQ ID NO:36, SEQ ID NO:37, SEQ ID NO:38 or SEQ ID NO:39.

56. (Amended) Harvestable parts or propagation material from the transgenic plant of claim 36, comprising the CKI which interacts with CDC2a that was introduced into the parent plant.